What is claimed is:

1. A monoclonal antibody which specifically binds and forms a complex with TIP-2 antigen located on the surface of human cancer cells, wherein the monoclonal antibody binds to the same antigen as monoclonal antibody 27.B1 produced by hybridoma 27.B1 (ATCC Designation No. PTA-1599) or monoclonal antibody 27.F7 produced by hybridoma 27.F7 (ATCC Designation No. PTA-1598).

2. A murine monoclonal antibody of claim 1.

3. A chimeric monoclonal antibody of claim 1.

4. A humanized monoclonal antibody of claim 1.

5. A human monoclonal antibody of claim 1.

6. A monoclonal antibody of claim 1 which binds to the same epitope as monoclonal antibody 27.B1.

7. The monoclonal antibody 27.B1 produced by hybridoma 27.B1 (ATCC Designation No. PTA-1599).

8. A hybridoma cell producing the monoclonal antibody of claim 1.

9. The hybridoma of claim 8 designated 27.B1 (ATCC Accession No. PTA-1599).

10. A monoclonal antibody of claim 1 labelled with a detectable marker.

11. A monoclonal antibody of claim 10, wherein the detectable marker is a radioactive isotope, enzyme, dye, biotin, fluorescent label or chemiluminescent label.

12. A monoclonal antibody of claim 1 conjugated to a therapeutic agent.

13. A monoclonal antibody of claim 12, wherein the therapeutic agent is a radioisotope, toxin, toxoid or chemotherapeutic agent.

14. A monoclonal antibody of claim 1 conjugated to an imaging agent.

15. The monoclonal antibody of claim 14, wherein the imaging agent is a radioisotope.

16. A monoclonal antibody of claim 1 which binds to the same epitope as monoclonal antibody 27.F7.

17. The monoclonal antibody 27.F7 produced by hybridoma 27.F7 (ATCC Designation No. 1598).

18. The hybridoma of claim 8, designated 27.F7 (ATCC Designation No. 1598).

19. A method of detecting TIP-2 antigen bearing cancer cells in a sample comprising:

a) contacting the sample with an antibody directed to an epitope on TIP-2 antigen, or an Fab fragment of an antibody directed to an epitope on TIP-2 antigen, which epitope is recognized by the antibody or the Fab fragment, said antibody or Fab fragment being detectably labeled, under appropriate conditions to produce an antibody/Fab fragment-antigen complex comprising the detectably labeled antibody or Fab fragment bound to any TIP-2 antigen on the surface of cells in the sample;

a) removing any labeled antibody/Fab fragment not bound in the antibody/Fab fragment-antigen complex formed in step (a); and

b) determining presence of the antibody/Fab fragment-antigen complex by detecting the label of the detectably labeled antibody, presence of antibody/Fab fragment-antigen complex indicating TIP-2 antigen-bearing cancer cells in the sample.

20. The method of claim 19, wherein the detectable label is selected from the group consisting of radioactive isotope, enzyme, dye, biotin, a fluorescent label or a chemiluminescent label.

21. The method of claim 19, wherein the TIP-2 antigen-bearing cancer cells are human cancer cells.

22. The method of claim 19, wherein the cancer cells are selected from a group consisting of melanoma cells, basal cell carcinoma cells, squamous cell carcinoma cells, neuroblastoma cells, glioblastoma multiforme cells, myeloid leukemic cells, breast carcinoma cells, colon carcinoma cells, endometrial carcinoma cells, lung carcinoma cells, ovarian carcinoma cells, prostate carcinoma cells, cervical carcinoma cells, osteosarcoma cells, testicular carcinoma cells and lymphoma cells.

23. The method of claim 19, wherein the antibody is a monoclonal antibody.

24. The method of claim 19, wherein the epitope is recognized by monoclonal antibody 27.F7 produced by the hybridoma designated 27.F7 (ATCC Designation No. PTA-1598) .

25. The method of claim 19, wherein the epitope is recognized by monoclonal antibody 27.B1 produced by the hybridoma designated 27.B1 (ATCC Designation No. PTA-1599).

26. The method of claim 19, wherein the monoclonal antibody is a human monoclonal antibody or a murine monoclonal antibody.

27. The method of claim 19, wherein the sample is selected from the group consisting of serum, plasma, saliva, tears, mucosal discharge, urine, peritoneal fluid, cerebrospinal fluid, lymphatic fluid, bone marrow, breast biopsy, tissue, lymph nodes, prostate tissue, tissues from breast and prostate metastases, culture media, and other tumors where TIP-2 can be an associated antigen.

28. The method of claim 19, wherein TIP-2 is concentrated from the sample by alcohol precipitation prior to step (a).

29. The method of claim 19, wherein the sample is culture media.

30. A method of detecting TIP-2 antigen bearing cancer cells in a sample comprising:

a) contacting the sample with an antibody directed to an epitope on TIP-2 antigen, or an Fab fragment of an antibody directed to an epitope on TIP-2 antigen, which epitope is recognized by the antibody or the Fab fragment under appropriate conditions to produce an antibody/Fab fragment-antigen complex comprising the antibody or Fab fragment bound to any TIP-2 antigen on the surface of cells in the sample;

b) removing any antibody/Fab fragment not bound in the antibody/Fab fragment-antigen complex formed in step (a);

c) contacting the antibody/Fab fragment-antigen complex of step (b) with a second antibody which specifically binds to the antibody/Fab fragment-antigen complex, said second antibody being detectably labeled, under appropriate conditions to permit the second labeled antibody to bind to the antibody/Fab fragment-antigen complex;

d) removing any second labeled antibody not bound to the antibody/Fab fragment-antigen complex product in (c); and

e) determining presence of the antibody/Fab fragment-antigen complex bound to the second labeled antibody by detecting the label of second antibody, presence of antibody/Fab fragment-antigen complex indicating TIP-2 antigen-bearing human cancer cells in the sample.

31. The method of claim 30, wherein the detectable label is radioactive isotope, enzyme, dye, biotin, a fluorescent label or a chemiluminescent label.

32. The method of claim 30, wherein the TIP-2 antigen-bearing cancer cells are human cancer cells.

33. The method of claim 30, wherein the cancer cells are selected from a group consisting of melanoma cells, basal cell carcinoma cells, squamous cell carcinoma cells, neuroblastoma cells, glioblastoma multiforme cells, myeloid leukemic cells, breast carcinoma cells, colon carcinoma cells, endometrial carcinoma cells, lung carcinoma cells, ovarian carcinoma cells,

prostate carcinoma cells, cervical carcinoma cells, osteosarcoma cells, testicular carcinoma cells and lymphoma cells.

34. The method of claim 30, wherein the antibody is a monoclonal antibody.

35. The method of claim 30, wherein the epitope is recognized by monoclonal antibody 27.F7 produced by the hybridoma designated 27.F7 (ATCC Designation No. PTA-1598).

36. The method of claim 30, wherein the epitope is recognized by monoclonal antibody 27.B1 produced by the hybridoma designated 27.B1 (ATCC Designation No. PTA-1599).

37. The method of claim 30, wherein the monoclonal antibody is a human monoclonal antibody or a murine monoclonal antibody.

38. The method of claim 30, wherein the sample is selected from the group consisting of serum, plasma, saliva, tears, mucosal discharge, urine, peritoneal fluid, cerebrospinal fluid, lymphatic fluid, bone marrow, breast biopsy, tissue, lymph nodes, prostate tissue, tissues from breast and prostate metastases, culture media, and other tumors where TIP-2 can be an associated antigen.

39. The method of claim 30, where TIP-2 is concentrated from the sample by alcohol precipitation prior to step (a).

40. A method for diagnosing cancer in a subject by detecting TIP-2 antigen-bearing cancer cells which comprises:

(a) obtaining a sample of the subject's peripheral blood;

(b) contacting the sample with an antibody directed to an epitope on TIP-2 antigen or an Fab fragment thereof, which epitope is recognized by the antibody or an Fab fragment thereof, said antibody being detectably labeled, under appropriate conditions to produce an antibody/Fab fragment-TIP-2 antigen complex comprising the detectably labeled antibody bound to any TIP-2 antigen on the surface of cells in the sample;

(c) removing any labeled antibody/Fab fragment not bound in the antibody/Fab fragment-TIP-2 antigen complex formed in step (b); and

(d) determining presence of the antibody/Fab fragment-TIP-2 antigen complex by detecting the label of the detectably labeled antibody, presence of antibody/Fab fragment-TIP-2 antigen complex indicating diagnosis of cancer in the subject.

41. The method of claim 40, wherein the detectable label is radioactive isotope, enzyme, dye, biotin, a fluorescent label or a chemiluminescent label.

42. The method of claim 40, wherein the subject is human.

43. The method of claim 40, wherein the cancer is human melanoma, basal cell carcinoma, squamous cell carcinoma, neuroblastoma, glioblastoma multiforme, myeloid leukemia, breast carcinoma, colon carcinoma, endometrial carcinoma, lung carcinoma, ovarian carcinoma, prostate carcinoma, cervical carcinoma, osteosarcoma, testicular carcinoma and lymphoma.

44. The method of claim 40, wherein the antibody is a monoclonal antibody.

45. The method of claim 40, wherein the epitope is recognized by monoclonal antibody 27.F7 produced by the hybridoma designated 27.F7 (ATCC Designation No. PTA-1598).

46. The method of claim 84, wherein the epitope is recognized by monoclonal antibody 27.B1 produced by the hybridoma designated 27.B1 (ATCC Designation No. PTA-1599).

47. The method of claim 84, wherein the antibody is a human monoclonal antibody or a murine monoclonal antibody.

48. The method of claim 84, wherein the sample is selected from the group consisting of serum, plasma, saliva, tears, mucosal discharge, urine, peritoneal fluid, cerebrospinal fluid, lymphatic fluid, bone marrow, breast biopsy, tissue, lymph nodes, prostate tissue, tissues from breast and prostate metastases, culture media, and other tumors where TIP-2 can be an associated antigen.

49. The method of claim 84, wherein TIP-2 is concentrated from the sample by alcohol precipitation prior to step (a).

50. A method for diagnosing cancer in a subject by detecting TIP-2 antigen-bearing cancer cells which comprises:

a) obtaining a sample of the subject's peripheral blood;

b) contacting the sample with an antibody directed to an epitope on TIP-2 antigen or Fab fragment thereof, which epitope is recognized by monoclonal antibody/Fab fragment or Fab fragment thereof, under appropriate conditions to produce an antibody/Fab fragment-TIP-2 antigen complex comprising the antibody bound to any TIP-2 antigen on the surface of cells in the sample;

c) removing any antibody/Fab fragment not bound in the antibody/Fab fragment-TIP-2 antigen complex formed in step (b);

d) contacting the antibody/Fab fragment-TIP-2 antigen complex of step (c) with a second antibody which specifically binds to the antibody/Fab fragment-TIP-2 antigen complex, said second antibody being detectably labeled, under appropriate conditions to permit the second labeled antibody to bind to the antibody/Fab fragment-TIP-2 antigen complex;

e) removing any second labeled antibody not bound to the antibody/Fab fragment-TIP-2 antigen complex product in (d); and

f) determining presence of the antibody/Fab fragment-TIP-2 antigen complex bound to the second labeled antibody by detecting the label of second antibody, presence of antibody/Fab fragment-TIP-2 antigen complex indicating diagnosis of cancer in the subject.

51. The method of claim 108, wherein the detectable label is radioactive isotope, enzyme, dye, biotin, a fluorescent label or a chemiluminescent label.

52. The method of claim 108, wherein the subject is human.

53. The method of claim 108, wherein the cancer is human melanoma, basal cell carcinoma, squamous cell carcinoma, neuroblastoma, glioblastoma multiforme, myeloid leukemia, breast carcinoma, colon carcinoma, endometrial carcinoma, lung carcinoma, ovarian carcinoma, prostate carcinoma, cervical carcinoma, osteosarcoma, testicular carcinoma and lymphoma.

54. The method of claim 108, wherein the antibody is a monoclonal antibody.

55. The method of claim 108, wherein the epitope is recognized by monoclonal antibody 27.F7 produced by the hybridoma designated 27.F7 (ATCC Designation No. PTA-1598) .

56. The method of claim 84, wherein the epitope is recognized by monoclonal antibody 27.B1 produced by the hybridoma designated 27.B1 (ATCC Designation No. PTA-1599).

57. The method of claim 108, wherein the antibody is a human monoclonal antibody or a murine monoclonal antibody.

58. The method of claim 108, wherein the sample is selected from the group consisting of serum, plasma, saliva, tears, mucosal discharge, urine, peritoneal fluid, cerebrospinal fluid, lymphatic fluid, bone marrow, breast biopsy, tissue, lymph nodes, prostate tissue, tissues from breast and prostate metastases, culture media, and other tumors where TIP-2 can be an associated antigen.

59. The method of claim 108, wherein TIP-2 is concentrated from the sample by alcohol precipitation prior to step (a).

60. An *in vivo* method for diagnosing cancer in a subject by detecting TIP-2 antigen-bearing cancer cells which comprises:

a) administering to the subject an antibody directed to an epitope on TIP-2 antigen or Fab fragment thereof, which epitope is recognized by the antibody or the Fab fragment, said antibody being detectably labeled, under appropriate conditions to bind the antibody to TIP-2 antigen on the surface of any cells in the subject; and

b) determining presence of the detectably labeled antibody bound to the surface of cells in the subject, presence of detectably labeled antibody bound to cells indicating diagnosis of cancer in the subject.

61. The method of claim 116, wherein the detectable label is radioactive isotope, enzyme, dye, biotin, a fluorescent label or a chemiluminescent label.

62. The method of claim 116, wherein the subject is human.

63. The method of claim 116, wherein the cancer is human melanoma, basal cell carcinoma, squamous cell carcinoma, neuroblastoma, glioblastoma multiforme, myeloid leukemia, breast carcinoma, colon carcinoma, endometrial carcinoma, lung carcinoma, ovarian carcinoma, prostate carcinoma, cervical carcinoma, osteosarcoma, testicular carcinoma and lymphoma.

64. The method of claim 116, wherein the antibody is a monoclonal antibody.

65. The method of claim 120, wherein the epitope is recognized by monoclonal antibody 27.F7 produced by the hybridoma designated 27.F7 (ATCC Designation No. PTA-1598) .

66. The method of claim 120, wherein the epitope is recognized by monoclonal antibody 27.B1 produced by the hybridoma designated 27.B1 (ATCC Designation No. PTA-1599).

67. The method of claim 116, wherein the antibody is a human monoclonal antibody or a murine monoclonal antibody.

68. The method of claim 116, wherein in step (b) presence of the antibody or Fab fragment thereof bound to the surface of cells in the subject is detected wherein means for detecting the detectable label is an imaging device.

69. The method of claim 116, wherein the imaging device is magnetic resonance imaging device.

70. The method of claim 116, wherein the imaging device is X-ray immunoscintigraphy imaging device.

71. A method for delivering exogenous material to TIP-2 antigen-bearing cancer cells of a human subject comprising administering to the subject a liposome carrying a conjugate of the exogenous material, wherein an antibody or an Fab fragment of the antibody is coupled to the outer surface of the liposome to target delivery to the cancer cells.

72. The method of claim 138, herein the exogenous material is selected from the group consisting of anti-cancer drugs, radioisotopes, toxins, antibiotics, prodrugs, enzymes, and chemotherapeutic compounds.

73. The method of claim 138, wherein the TIP-2 antigen-bearing cancer cells are human melanoma cells, basal cell carcinoma cells, squamous cell carcinoma cells, neuroblastoma cells, glioblastoma multiforme cells, myeloid leukemic cells, breast carcinoma cells, colon carcinoma cells, endometrial carcinoma cells, lung carcinoma cells, ovarian carcinoma cells, prostate carcinoma cells, cervical carcinoma cells, osteosarcoma cells, testicular carcinoma cells and lymphoma cells.

74. A method for treating cancer in a human subject by evoking a specific immune response which comprises administering to the subject a whole TIP-2 antigen protein or a peptide fragment of TIP-2 to the subject.

75. The method of claim 141, wherein the specific immune response is complement-dependent cytolysis of TIP-2 antigen-bearing cancer cells.

76. The method of claim 141, wherein the specific immune response is activation of natural killer cells towards TIP-2 antigen-bearing cancer cells.

77. The method of claim 141, wherein the peptide fragment of TIP-2 antigen comprises the amino acid sequence Lys Leu Leu Gly Gly Gln Ile Gly Leu (SEQ. ID NO.).

78. The method of claim 141, wherein the peptide fragment of TIP-2 antigen comprises the amino acid sequence Ser Leu Leu Gly Cys Arg His Tyr Glu Val (SEQ. ID No.).

79. A method for treating cancer in a human subject by inducing apoptosis of cancer cells which comprises administering to the subject a whole TIP-2 antigen protein or a peptide fragment of TIP-2 to the subject.

80. A method for treating cancer in a human subject by evoking a specific immune response which comprises:

a) removing dendritic cells from said subject;

b) contacting the dendritic cells of step (a) with a whole TIP-2 antigen protein or a peptide fragment of TIP-2; and

c) reintroducing the dendritic cells of step (b) into said subject.

81. The method of claim 147, wherein the peptide fragment of TIP-2 antigen comprises the amino acid sequence Lys Leu Leu Gly Gly Gln Ile Gly Leu (SEQ. ID NO.).

82. The method of claim 147, wherein the peptide fragment of TIP-2 antigen comprises the amino acid sequence Ser Leu Leu Gly Cys Arg His Tyr Glu Val (SEQ. ID No.).

83. The method of claim 147, wherein the specific immune response is complement-dependent cytolysis of TIP-2 antigen-bearing cancer cells.

84. The method of claim 147, wherein the specific immune response is activation of natural killer cells or macrophages towards TIP-2 antigen-bearing cancer cells.

85. The method of claim 147, wherein the specific immune response is the production of antibodies in the subject against the whole TIP-2 antigen protein or the peptide fragment of TIP-2.

86. A method for treating cancer in a human subject by inducing apoptosis of cancer cells which comprises administering a whole TIP-2 antigen protein or a peptide fragment of TIP-2 to the subject.

87. A method for treating cancer in a human subject by passive immunization which comprises administering an antibody directed to an epitope on TIP-2 antigen or a peptide fragment thereof.

88. The method of claim 154, wherein the antibody induces apoptosis of TIP-2 antigen bearing cells.

89. An isolated peptide having the amino acid sequence Lys Leu Leu Gly Gly Gln Ile Gly Leu (SEQ. ID No.).

90. An isolated peptide having the amino acid sequence Ser Leu Leu Gly Cys Arg His Tyr Glu Val (SEQ. ID No.).

91. A method for immunohistochemical screening of a tissue section from a tumor sample for the presence of TIP-2 antigen bearing cancer cells which comprises:

a) contacting the tissue section from the tumor sample with an antibody directed to an epitope on TIP-2 antigen or Fab fragment thereof, which epitope is recognized by the antibody or Fab fragment said antibody/Fab fragment being detectably labeled, under appropriate conditions to produce an antibody/Fab fragment-TIP-2 antigen complex comprising the detectably labeled antibody bound to any TIP-2 antigen on the surface of cells in the tissue section;

a) removing any labeled antibody/Fab fragment not bound in the antibody/Fab fragment-TIP-2 antigen complex formed in step (a); and

b) determining presence of the antibody/Fab fragment-TIP-2 antigen complex by detecting the label of the detectably labeled antibody, presence of antibody/Fab fragment-TIP-2 antigen complex indicating TIP-2 antigen-bearing human cancer cells in the sample.

92. The method of claim 158 wherein the tissue section is preserved freshly frozen tissue or formalin-fixed tissue.

93. The method of claim 158 wherein the detectable label is radioactive isotope, enzyme, dye, biotin, a fluorescent label or a chemiluminescent label.

94. The method of claim 158, wherein the TIP-2 antigen-bearing cancer cells are human cancer cells.

95. The method of claim 158, wherein the cancer cells are selected from a group consisting of melanoma cells, basal cell carcinoma cells, squamous cell carcinoma cells, neuroblastoma cells, glioblastoma multiforme cells, myeloid leukemic cells, breast carcinoma cells, colon carcinoma cells, endometrial carcinoma cells, lung carcinoma cells, ovarian carcinoma cells, prostate carcinoma cells, cervical carcinoma cells, osteosarcoma cells, testicular carcinoma cells and lymphoma cells.

96. The method of claim 158, wherein the antibody is a monoclonal antibody.

97. The method of claim 120, wherein the epitope is recognized by monoclonal antibody 27.F7 produced by the hybridoma designated 27.F7 (ATCC Designation No. PTA-1598) .

98. The method of claim 120, wherein the epitope is recognized by monoclonal antibody 27.B1 produced by the hybridoma designated 27.B1 (ATCC Designation No. PTA-1599).

99. The method of claim 158, wherein the antibody is a human monoclonal antibody or a murine monoclonal antibody.

100. A kit for detecting the presence of TIP-2 antigen-bearing cancer cells in a sample comprising:

a) a solid support having a plurality of covalently linked probes which may be the same or different, each probe of which comprises a monoclonal antibody directed to an epitope on TIP-2 antigen or Fab fragment thereof; and

b) a means for determining the presence of monoclonal antibody/Fab fragment-TIP-2 antigen complex.

101. The kit of claim 165, wherein the means for determining the presence of the monoclonal antibody/Fab fragment-TIP-2 antigen complex is a detectably labeled second antibody which specifically binds to the monoclonal antibody directed to the epitope on TIP-2 antigen.

102. The kit of claim 165, wherein the monoclonal antibody directed to the epitope on TIP-2 antigen is human monoclonal antibody 27.F7 directed to an epitope on TIP-2 antigen, which epitope is recognized by monoclonal antibody 27.F7 produced by the hybridoma designated 27.F7 (ATCC Designation No. PTA-1598).

103. The kit of claim 165, wherein the monoclonal antibody directed to the epitope on TIP-2 antigen is human monoclonal antibody 27.B1 directed to an epitope on TIP-2 antigen, which epitope is recognized by monoclonal antibody 27.B1 produced by the hybridoma designated 27.B1 (ATCC Designation No. PTA-1599).

104. The kit of claim 165, wherein the detectable label is radioactive isotope, enzyme, dye, biotin, a fluorescent label or a chemiluminescent label.

105. The kit of claim 165, wherein the TIP-2 antigen-bearing cancer cells are human cancer cells.

106. The kit of claim 165, wherein the cancer cells are selected from a group consisting of melanoma cells, basal cell carcinoma cells, squamous cell carcinoma cells, neuroblastoma cells, glioblastoma multiforme cells, myeloid leukemic cells, breast carcinoma cells, colon carcinoma cells, endometrial carcinoma cells, lung carcinoma cells, ovarian carcinoma cells, prostate carcinoma cells, cervical carcinoma cells, osteosarcoma cells, testicular carcinoma cells and lymphoma cells.

107. The kit of claim 165, wherein the antibody is a monoclonal antibody.

108. The kit of claim 165, wherein the antibody is a human monoclonal antibody or a murine monoclonal antibody.

109. The kit of claim 165, wherein the sample is selected from the group consisting of serum, plasma, saliva, tears, mucosal discharge, urine, peritoneal fluid, cerebrospinal fluid, lymphatic fluid, bone marrow, breast biopsy, tissue, lymph nodes, prostate tissue, tissues from breast and prostate metastases, culture

media, and other tumors where TIP-2 can be an associated antigen.

110. The kit of claim 165, wherein the sample is culture media.

111. The kit of claim 165, wherein the sample is a tumor sample.

112. A method for detecting the presence of TIP-2 antigen in biological fluid comprising:

a) contacting a sample of the biological fluid with a antibody directed to an epitope on TIP-2 antigen or Fab fragment thereof, which epitope is recognized by the antibody or Fab fragment thereof, said antibody being detectably labeled, under appropriate conditions to produce an antibody/Fab fragment-TIP-2 antigen complex comprising the detectably labeled antibody bound to any TIP-2 antigen on the surface of cells in the sample;

c) removing any labeled antibody not bound in the antibody/Fab fragment-TIP-2 antigen complex formed in step (a); and

d) determining presence of the antibody/Fab fragment-TIP-2 antigen complex by detecting the label of the detectably labeled antibody, presence of antibody/Fab fragment-TIP-2 antigen complex indicating TIP-2 antigen-bearing human cancer cells in the biological fluid.

113. The method of claim 178, wherein the detectable label is radioactive isotope, enzyme, dye, biotin, a fluorescent label or a chemiluminescent label.

114. The method of claim 178, wherein the TIP-2 antigen-bearing cancer cells are human cancer cells.

115. The method of claim 178, wherein the cancer cells are selected from a group consisting of melanoma cells, basal cell carcinoma cells, squamous cell carcinoma cells, neuroblastoma cells, glioblastoma multiforme cells, myeloid leukemic cells, breast carcinoma cells, colon carcinoma cells, endometrial carcinoma cells, lung carcinoma cells, ovarian carcinoma cells, prostate carcinoma cells, cervical carcinoma cells, osteosarcoma cells, testicular carcinoma cells and lymphoma cells.

116. The method of claim 178, wherein the antibody is a monoclonal antibody.

117. The method of claim 120, wherein the epitope is recognized by monoclonal antibody 27.F7 produced by the hybridoma designated 27.F7 (ATCC Designation No. PTA-1598).

118. The method of claim 120, wherein the epitope is recognized by monoclonal antibody 27.B1 produced by the hybridoma designated 27.B1 (ATCC Designation No. PTA-1599).

119. The method of claim 178, wherein the antibody is a human monoclonal antibody or a murine monoclonal antibody.

120. The method of claim 178, wherein the biological fluid is selected from the group consisting of serum, plasma, saliva, tears, mucosal discharge, urine, peritoneal fluid, cerebrospinal fluid, and lymphatic fluid.

121. The method of claim 178, wherein TIP-2 is concentrated from the sample by alcohol precipitation prior to step (a).

122. The method of claim 178, wherein the biological fluid is culture media.

123. The method of claim 178, wherein the monoclonal antibody directed to the epitope on TIP-2 antigen is human monoclonal antibody 27.F7 directed to an epitope on TIP-2 antigen, which epitope is recognized by monoclonal antibody 27.F7 produced by the hybridoma designated ________.

124. The method of claim 178, wherein the monoclonal antibody directed to the epitope of TIP-2 antigen is a murine monoclonal antibody directed to an epitope on TIP-2 antigen.

125. The method of claim 178, wherein the TIP-2 antigen is present on TIP-2 antigen-bearing cancer cells in the biological fluid.

126. A method for monitoring progression of cancer, wherein cancer cells are TIP-2 antigen-bearing cancer cells, in a subject comprising:

a) administering to a subject diagnosed with cancer an antibody directed to an epitope on TIP-2 antigen or Fab fragment thereof, which epitope is recognized the antibody or Fab fragment thereof, said antibody being detectably labeled, under appropriate conditions to bind the antibody to TIP-2 antigen on the surface of any cells in the subject;

b) determining presence of detectably labeled antibody/Fab fragment bound to the surface of cells in the subject;

c) comparing the presence of detectably labeled antibody/Fab fragment bound to cells in step (b) with the presence of detectably labeled antibody bound to cells at (i) diagnosis time or (ii) after treatment, wherein a greater presence of detectably labeled antibody/Fab fragment bound to cells in step (b) than at (i) diagnosis time or (ii) after treatment, indicates progression of the cancer in the subject and a lesser presence of detectably labeled antibody/Fab fragment bound to cells in step (b) than at (i) diagnosis time or (ii) after treatment indicates regression of the cancer in the subject.

127. The method of claim 209, wherein the detectable label is radioactive isotope, enzyme, dye, biotin, a fluorescent label/ or a chemiluminescent label.

128. The method of claim 209, wherein the TIP-2 antigen-bearing cancer cells are human cancer cells.

129. The method of claim 209, wherein the cancer cells are selected from a group consisting of melanoma cells, basal cell carcinoma cells, squamous cell carcinoma cells, neuroblastoma cells, glioblastoma multiforme cells, myeloid leukemic cells, breast carcinoma cells, colon carcinoma cells, endometrial carcinoma cells, lung carcinoma cells, ovarian carcinoma cells, prostate carcinoma cells, cervical carcinoma cells, osteosarcoma cells, testicular carcinoma cells and lymphoma cells.

130. The method of claim 209, wherein the antibody is a monoclonal antibody.

131. The method of claim 120, wherein the epitope is recognized by monoclonal antibody 27.F7 produced by the hybridoma designated 27.F7 (ATCC Designation No. PTA-1598) .

132. The method of claim 120, wherein the epitope is recognized by monoclonal antibody 27.B1 produced by the hybridoma designated 27.B1 (ATCC Designation No. PTA-1599).

133. The method of claim 209, wherein the antibody is a human monoclonal antibody or a murine monoclonal antibody.

134. The method of claim 209, wherein in step (b) presence of the detectably labeled antibody/Fab fragment bound to the surface of cells in the subject is detected by means for detecting the detectable label is an imaging device.

135. The method of claim 209, wherein the imaging device is magnetic resonance imaging device.

136. The method of claim 209, wherein the imaging device is X-ray immunoscintigraphy-imaging device.

137. A method for diagnosing cancer associated with the expression of TIP-2 antigen in a human subject which comprises:

(a) obtaining mRNA from a sample of the subject's peripheral blood;

(b) preparing cDNA from the mRNA from step (a);

(c) amplifying DNA encoding TIP-2 antigen present in the cDNA prepared in step (b) by a polymerase

chain reaction utilizing at least two oligonucleotide primers, wherein each of the primers specifically hybridizes with DNA encoding TIP-2 antigen, wherein the primers comprise oligonucleotides having a sequence included within the sequence of **SEQ ID NO. __**; and

(d) detecting the presence of any resulting amplified DNA, the presence of such amplified DNA being diagnostic for cancer associated with the expression of TIP-2 antigen.

138. The method of claim 249, wherein the presence of any amplified DNA in step (d) is detected using a labeled oligonucleotide probe which specifically hybridizes with the amplified DNA.

139. The method of claim 249, wherein the labeled probe is radiolabeled with ^{32}P or ^{33}P.

140. A method for diagnosing cancer associated with the expression of TIP-2 antigen in a human subject which comprises:

(a) obtaining mRNA from a sample of the subject's peripheral blood;

(b) preparing cDNA from the mRNA from step (a);

(c) amplifying DNA encoding TIP-2 antigen present in the cDNA prepared in step (b);

(d) determining the amount of any resulting amplified DNA; and

(e) comparing the amount of amplified DNA determined in step (d) with previously determined standard amounts of amplified DNA, each standard amount

being indicative of a particular stage of cancer associated with the expression of TIP-2 antigen.

141. The method of claim 252, wherein the stage is precancerous cancer or benign dysplasia.

142. The method of claim 252, wherein the cancer is a tumor, cancer in the lymph nodes, or metastatic cancer.

143. A composition which comprises a suitable carrier and an effective amount of a monoclonal antibody, which monoclonal antibody is produced by a method comprising:

(a) fusing a lymphoid cell capable of producing antibody with a trioma cell which does not produce any antibody and is obtained by fusing a heteromyeloma cell which does not produce any antibody with a human lymphoid cell so as to thereby form tetroma cells;

(b) incubating the tetroma cells formed in step (a) under conditions permissive for the production of antibody by the tetroma cells, so as to thereby produce the monoclonal antibody; and

(c) recovering the monoclonal antibody so produced.

144. The composition of claim 79, wherein the monoclonal antibody is specific for an antigen associated with a condition in a subject.

145. The composition of claim 80, wherein the condition is cancer and the amount of monoclonal antibody is sufficient to inhibit the growth of or eliminate the cancer.

146. The composition of claim 81, wherein the cancer is breast cancer, thyroid cancer or prostate cancer.

147. The composition of claim 80, wherein the condition is an infection and the amount of monoclonal antibody is sufficient to inhibit the growth of or kill the infectious agent.

148. The composition of claim 83, wherein the infectious agent is Hanta virus, HTLV I, HTLV II, HIV, herpes virus, influenza virus, Ebola virus, human papilloma virus, Staphlococcus, Streptococcus, Klebsiella, E. coli, anthrax or cryptococcus.

149. The composition of claim 80, wherein the condition is associated with a toxin and the amount of monoclonal antibody is sufficient to reduce the amount of or destroy the toxin.

150. The composition of claim 85, wherein the toxin is tetanus, anthrax, botulinum, snake venom or spider venom.

151. The composition of claim 80, wherein the condition is an autoimmune disease and the amount of monoclonal antibody is sufficient to reduce the amount of or destroy the offending antibody.

152. The composition of claim 87, wherein the autoimmune disease is lupus, thyroiditis, graft versus host disease, transplantation rejection or rheumatoid arthritis.

153. The composition of claim 80, wherein the monoclonal antibody is coupled to an effector molecule.

154. The composition of claim 89, wherein the effector molecule is a cytotoxic agent, drug, enzyme, dye, or radioisotope.

155. The composition of claim 80, wherein the monoclonal antibody is coupled to a carrier.

156. The composition of claim 91, wherein the carrier is a liposome.

157. A method of treating a condition in a subject comprising administering to the subject an amount of the composition of claim 80 effective to bind the antigen associated with the condition so as to treat the condition in the subject.

158. A method of preventing a condition in a subject comprising administering to the subject an amount of the composition of claim 80 effective to bind the antigen associated with the condition so as to prevent the condition in the subject.

159. The method of claim 94, wherein the subject previously exhibited the condition.

160. The method of claim 93 or 94 wherein the condition is associated with a cancer, a tumor, a toxin, an infectious agent, an enzyme dysfunction, a hormone dysfunction, an autoimmune disease, an immune dysfunction, a viral antigen, a bacterial antigen, a eukaryotic antigen, or rejection of a transplanted tissue.

161. The method of claim 96, wherein the condition is septicemia, sepsis, septic shock, viremia, bacteremia or fungemia.

162. The method of claim 96, wherein the cancer is thyroid cancer, breast cancer or prostate cancer.

163. The method of claim 96, wherein the infectious agent is Hanta virus, HTLV I, HTLV II, HIV, herpes virus, influenza virus, Ebola virus, human papilloma virus, Staphlococcus, Streptococcus, Klebsiella, E. coli, anthrax or cryptococcus.

164. The method of claim 96, wherein the toxin is tetanus, anthrax, botulinum, snake venom or spider venom.

165. The method of claim 96, wherein the tumor is benign.

166. The method of claim 96, wherein the enzyme dysfunction is hyperactivity or overproduction of the enzyme.

167. The method of claim 96, wherein the hormone dysfunction is hyperactivity or overproduction of the hormone.

168. The method of claim 96, wherein the immune dysfunction is CD3 or CD4 mediated.

169. The method of claim 96, wherein the autoimmune disease is lupus, thyroiditis, graft versus host disease, transplantation rejection or rheumatoid arthritis.

170. The composition of claim 79, wherein the heteromyeloma cell is the cell designated B6B11 (ATCC accession number HB-12481).

171. The composition of claim 79, wherein the heteromyeloma cell is a B6B11-like cell.

172. The composition of claim 79, wherein the human lymphoid cell is a myeloma ~~cell~~.

173. The composition of claim 79, wherein the human lymphoid cell is a splenocyte or a lymph node cell.

174. The composition of claim 79, wherein the trioma cell is the cell designated MFP-2 (ATCC accession number HB-12482).